Müller, with which one is familiar in the case of the wild thyme and other Labiatæ; but a large number of flowers in this particular locality had all the anthers bitten off, a depredation which I attributed to the hive-bees, inasmuch as the same was the case in other habitats near hives, but not in those at a greater distance from cottage-gardens. The only other flowers growing on or near the same bank which I observed the bees to visit were the dandelion several times, and *Veronica buxbaumii* once.

At this early period of the year the following species of insects were captured on the dandelion; those marked with an * are not in Müller's list of ninety-three kinds which visit this plant, unless under synonyms which I fail to recognise.—Hymenoptera, *Apis mellifica*, **Halictus lugubris*, **Andrena nana*, *A. varians*, and *A. nitida;* Diptera, **Syrphus clypeata* and *Eristalis arbustorum;* Coleoptera, **Apion apricans*.

The sloe was abundantly visited by **Andrena fulvicrus* (Hymenoptera), both male and female, and by *Eristalis tenax* (Diptera). On opening the abdomen of the latter, it was found to contain abundance of pollen-grains, belonging to the species on which it was then feeding, and to the dandelion, mixed with a few larger triangular pollen-grains, belonging apparently to a Fuchsia; thus confirming the opinion at which I had previously arrived, that the Syrphidæ are large consumers of pollen. The abdomen of the Hymenoptera, on the other hand, contained but a very few pollen-grains, which might easily have been sucked up accidentally along with the nectar; and this was also the case with the hive-bee, the grains in this latter case belonging to the dandelion.

ALFRED W. BENNETT

NOTES

THE Cambridge Museums and Lecture Rooms Syndicate, in their eighth annual report state that the Regius Professor of Physic has again called their attention to the urgent need of better accommodation for the medical examinations. Among the additions which have been made to the collections in the several museums, the bequest of the late Mr. M'Andrew, F.R.S., of the whole of his collection of shells and other specimens, deserves the first mention. It is of the highest scientific value. A most interesting collection of human crania, made by the late Dr. Thurnam, of Devizes, has been presented to the Museum of Human Anatomy, through the liberality of Prof. Humphry. A series of Devonian fossils, of great beauty, presented by Lady Burdett Coutts, deserves special mention, as also does the contribution of several hundred specimens of Palæozoic and other fossils by Prof. Hughes, and the gift of 500 sterna of birds by Prof. Newton and Mr. E. Newton, and of a skeleton of the extinct bird "the Great Auk" by Prof. Newton. The building of the Cavendish Laboratory is now finished, and the Laboratory is open for practical instruction in physics. As the several collections and the number of students in the several departments increase, the current expenditure necessarily increases. The Syndicate are therefore of opinion that the time has arrived when they are obliged to call the attention of the Senate to the necessity of increasing the amount of the annual grant to the museums and lecture-rooms maintenance fund. They suggest, however, that for the current year a special grant of 300*l*. be made to the fund. Appended are the reports of Professors Humphry and Newton, and of the Superintendent, Mr. J. W. Clark, which give details of the past year's work and the additions made to the various collections.

IN a Convocation at Oxford, on May 28, the name of H. S. Smith, F.R.S., Savilian Professor of Geometry, Fellow of Corpus, who had been nominated to the office of Keeper of the Museum, by the delegates, in succession to the late Prof. Phillips, was approved.

THE list of those on whom the honorary degree of LL.D. is to be conferred at the approaching Cambridge commencement is very numerous. We have already mentioned some names; the following is a list of the men connected with Science who are to receive the honour:—Sir Charles Lyell, F.R.S.; Sir James Paget, F.R.S.; M. Leverrier, of the Paris Observatory; Joachim Barrande, of the Royal Society of Sciences of Prague; George Bentham, F.R.S.; and William Lassell, F.R.S.

WE have received the prospectus of a new "College of Science and Literature," which it is proposed to establish at Bristol for the South and West of England and South Wales. Such an institution, if properly organised, would no doubt be of great service, as these extensive and important districts are far distant from any college in which the sciences applied to their various industries can be studied. Judging from the prospectus, the organisers of the scheme have sound notions of what such an institution ought to be, keeping in view as models Owens College and the Newcastle College of Science. Balliol College and New College, Oxford, have come very liberally forward in aid of the scheme, having offered to contribute towards it 300*l*. a year for five years. It is estimated that a capital sum of 25,000*l*. will be required, and an annual subscription of 3,000*l*. for the first five years secured. It is, however, proposed to commence operations when such proportion of these amounts has been guaranteed as may justify the expectation of success. A public meeting is to be held at Bristol on the 11th inst. to inaugurate the undertaking, which we sincerely hope will be taken up heartily by those interested in it.

MR. W. SAVILLE KENT, F.L.S., the late Superintending Naturalist of the Brighton Aquarium, and formerly Assistant in the British Museum, has been appointed to the control of the Manchester Aquarium. This aquarium being constructed on the "circulating" principle, advocated by Mr. Kent, and it being, moreover, intended to make the building subservient more to the instruction and education of the masses rather than for the realisation of extraordinary dividends, we may anticipate from it scientific results of the most gratifying sort. The tank frontage of the Manchester Aquarium presents a length of no less than 750 ft., an amount exceeding that of any aquarium yet constructed. An ample guarantee of the encouraging support this undertaking is likely to receive at the hands of the public is shown by the returns for the first week of its opening, the visitors who passed through the gates during that period numbering over 19,000.

THE Birmingham Natural History and Microscopical Society, whose enterprise we have had frequent occasion to speak of, is contemplating the foundation of an aquarium in Birmingham, and has been seeking information from the managers of various aquaria at home and abroad. The result is not altogether encouraging to those who desire to see an aquarium standing on its own legs as a scientific institution, apart from adventitious attractions. It seems that scarcely any existing aquarium pays that is not attached to or does not form part of some place of amusement; and Mr. Lloyd of the Crystal Palace Aquarium gives it as the result of his large experience that no aquarium can be made to pay its way, unassisted by other attractions, even in the largest centre of population, unless its cost be limited to 3,000*l*. and its annual expenses to 500*l*. Still we hope that, whether as an independent or as a parasitical institution, the Birmingham Society will be brave enough to take steps to establish an aquarium in that busy centre.

FROM the Twelfth Annual Report of the Birmingham Free Libraries Committee, we are glad to see that this system of libraries continues to enjoy increasing prosperity. These annual reports furnish a number of very interesting statistics as to the number and class of books in the libraries, number and occupation of readers, books most in demand, &c. The total number of books in the various libraries amounted at the end of last year to 69,279, a very large proportion of which are of a scientific character. From the statistics as to books most sought after, and the number of readers in the various subjects, we are glad to see that works of Science enjoy a large amount of patronage. The aggregate issue of works in the reference and lending libraries was 525,610.

We have received several American papers containing descriptions of a marine aquarium in San Francisco, California. It forms part of the many attractions of "Woodward's Gardens," an extensive piece of ground which has been inclosed and laid out by a private gentleman, Mr. Woodward, for the amusement and instruction of the people.

It is gratifying to learn that the lamented death of Prof. Agassiz will not prevent the continuation of the school of natural history at Penikese Island, the results of which during the season of 1873 proved to be of so much educational importance. A circular from Mr. Alexander Agassiz in regard to this states that two or three times as many persons as can be accommodated have already applied to be received during the coming summer, and that great interest is manifested to prosecute the study of nature under the eminent specialists who have been called to assist in the enterprise. The necessity of a permanent endowment is very justly set forth by Mr. Agassiz, and especially the importance of means for paying for the services of the men of science invited to officiate as instructors. He suggests that provision be made by the Legislatures of the several States for the endowment of scholarships, either by the actual payment of the sum of 5,000 dols., or an annual grant of 350 dols. The payment of this sum on the part of any State would entitle it to nominate two teachers for admission during the summer to the Penikese school, the selection to be made from among those most apt in natural history. No charge is made to the students of this school for tuition. It is announced that this school will open on July 7, and close on Aug. 29. Among the gentlemen mentioned as likely to take part in the instruction are Dr. Packard, Professors Wilder, Morse, Mayer, and Jordan, and Messrs. Putnam, Bickmore, Lyman, and others.

The Annual Report of the Trustees of the Museum of Comparative Zoology at Harvard College, Cambridge, U.S., shows that that institution is rapidly becoming one of the first of its kind anywhere. Its already large and valuable collections are constantly being added to, and rapid progress is being made in their systematic arrangement. The museum is open not only to regular students of natural history, but to all scientific men who care to make use of it in aid of their researches. It is in connection with the Harvard Museum that the Penikese School of Natural History was instituted; and, between the two, American students have rare advantages for the study at least of Icthyology.

The German Society for Polar Exploration has, it is said, purchased the harbour of Kristvig, on the Island of Averio, on the west coast of Norway, with the intention of making this in future the starting-point of German explorations of the Arctic regions.

Dr. Gross, the author of "Les habitations Lacustres du lac de Bienne," in which all the stations in that lake of the Stone and Bronze ages are described in detail, has just, says the *Continental Herald*, presented a gem of its kind to the Archæological Museum of the Berne City Library. This is a hatchet of nephrite, 7 in. long, a very scarce kind of stone, and only found in eastern Asia, the occurrence of which in the lake dwellings of Switzerland forms an unsolved puzzle.

The first ascent of a balloon over the Black Sea was made on April 19 from Odessa in the "Jules Favre," measuring 70,000 cubic feet. The ascent took place at 3.10 A.M. in a north-east direction; but as it mounted higher the wind veered and the balloon went out to sea in a south-east direction. It rose to a height of 7,000 Russian feet at a distance of about 16 miles from land. The balloon came to ground at Peresadovka, about 20 miles north from Nikolaeff, at 6h. 39m. A.M.

As the series of annual international exhibitions at South Kensington is to be discontinued after the present year, the Society of Arts have in consideration the organisation of a series of provincial exhibitions of an industrial character, to be held in the centres of the manufacturing districts. The plan is as yet by no means complete, but a principal part of it would be that the special industries of each locality should be, as far as possible, illustrated in its exhibition.

A public meeting was held in the Mechanics' Institute, Nottingham, on Tuesday night, to consider the further development of the movement instituted by the Cambridge University for extending its teaching to the masses of the people. The report of the committee for the past session stated that nearly 2,000 tickets for the lectures and classes were applied for in the town; 1,241 persons attended the lectures, and 615 the classes. There were 143 candidates at the examination, of whom 126 obtained certificates of merit. The financial statement was satisfactory, and the report expressed a belief that the movement would shortly be self-supporting.

At a recent meeting of the Royal Geographical Society of Ireland Mr. W. Harte, County Surveyor, co. Donegal, gave a description of "Supposed evidence of a recent change of level in the surface of co. Donegal." He adduced a number of proofs that there was a general and rapid depression in the surface of the county. Inhabitants had informed him that portions of the coast now covered with 20 ft. of water had been passed over dry-shod by their grandfathers. Many bogs also, of which the trees were still erect and *in situ*, had been recently inundated. That the water had never previously reached a higher level he proved from the fact that none of the bogs now under water had ever been previously inundated, for they were not permeated, as bogs which had been covered by water invariably were, with a fine microscopic sand. The submergence of Donegal was taking place at a rate that was much more rapid than had been suspected; old passes which were used to islands along the coast now no longer existed. The most interesting fact, however, was one brought to light by Mr. Fitzgerald, who found numerous cases of furnaces used by the ancient Irish to smelt the bog iron ore, but which were now under high-water mark.

The ravages caused by the *Phylloxera vastatrix* among the vineyards of France are becoming very serious. More than 150 various remedies have been tried but without success, and the only hope of many scientific men is in the introduction of varieties of vine which are known to be to a certain extent proof against the attacks of this insect. Many American kinds of vine are said to possess the property of resisting the disease for a much longer time than the French vines, and steps are being taken to introduce roots of these varieties into France. In the Department of Hérault alone the produce of wine has fallen from fourteen millions of hectolitres to eleven millions: not only is the fruit destroyed by the effects of the parasite, but the vine itself is destroyed in a year or two; and one female Phylloxera is said to produce two or three millions of young in a year.

At a recent meeting of the Boston Society of Natural History Prof. Morse read a paper on Natural Selection among the Molluscs, instancing the usually small size of certain species in the

Bay of Fundy, near Eastport. Here the tide rushes along with great power, and the molluscs are obliged to cling to the bottom with great tenacity to prevent being swept away. Only the smaller individuals can withstand this by getting into the crevices of the rocks. The species is thus perpetuated by the smaller members, and rarely attains any considerable size.

THE Inspectors of Salmon Fisheries of England and Wales have just issued their annual report. Examples are given of the serious injuries inflicted on salmon rivers—and not only on salmon rivers but on the health of the public—by the pollutions poured into rivers, and it is to be hoped that powers will be given to enforce the removal of such matters from our streams. Altogether the prospects of our salmon rivers appear very favourable, and much good is to be expected from the working of the new Act.

A SEAM of coal has been discovered at Sandwell Park, near Birmingham, 418 yards below the surface.

SOME good popular scientific lectures are at present being given by Prof. Gardner at the Polytechnic.

THE May number of *Annals and Magazine of Natural History* contains, among other articles, a list of butterflies taken by Lieut. Bell on the march to Coomasie, with a description of six new species. Dr. Nicholson describes a new genus of Palæozoic corals from the Niagara group of Indiania, which he names Duncanella, in honour of Mr. P. M. Duncan. Dr. Young gives a description of a new genus of carboniferous Polyzoa, and suggests the name Rhabdomeson. A plate is given illustrating *Rhabdomeson gracile*. There is also a brief note of an apparently new species of humming-bird, of the genus Eriocnemis, by Mr. Elliot. The discussion about Eozoon is continued.

AN excellent device has been forwarded to us for use in field-club excursions. It is designed to promote an interest in common flowers, and can of course be varied and worked without a prize. It consists of a large envelope, with a description, but not the name, of a plant, and directions as to what ought to be done with the plant when found. The particular envelope, forwarded to us by Mr. Higgins of the Liverpool Naturalist's Club, contains the following on its back :—

EXTRA PRIZE.

DESCRIPTION OF PLANT.

Leaves opposite, Sessile, Lanceolate, Acuminate.
Sepals 5, half as long as the 5 deeply-cleft Petals.
Stamens 10, Styles 3, height about 12 in.

Members finding a plant answering to this description should take it to the President or Botanical Referee, with their name signed at the foot of this slip. When correct the slips will be initialed and handed to the Secretary. The finder should be prepared to answer questions on the description; but the name of the plant will not be officially announced till after tea.

A Prize or Prizes will be awarded at the end of the Season to those most successful.

Signed, ____________________

THE additions to the Zoological Society's Gardens during the past week include a Beisa Antelope (*Oryx beisa*) new to the collection, from Central Africa, presented by Admiral Arthur Cumming; an Indian Gazelle (*Gazella bennetti*), presented by Mr. J. H. Bainbridge; an Indian Ratel (*Mellivora indica*), presented by Mr. L. Macneill; a Maugé's Dasyure (*Dasyurus maugæi*) from Australia, presented by Mr. F. Kirby; two Little Whimbrels (*Numenius minutus*) from the Navigator Islands, presented by Rev. S. J. Whitmee; a Guilding's Amazon (*Chrysotis guildingi*) from St. Vincent, purchased; a Bennett's Cassowary (*Casuarius bennetti*) from New Britain, deposited.

SCIENTIFIC SERIALS

THE *American Journal of Science*, May 1874.—The May number contains the following papers :—On the polarisation of light, by Prof. A. W. Wright. Prof. Wright instituted a series of observations with different instruments, which he describes, obtaining, however, only faint and uncertain results. At last he has been enabled to make observations he considers reliable. He obtained a quartz plate, cut perpendicularly to the axis, and exhibiting by polarised light an unusual intensity of colour. Examined with one Nicol and unpolarised light the plate is perfectly colourless, and shows no trace of its heterogeneous structure. Placed between two Nicols, it showed bands of colour, the plate being a macle, the body consisting of left-handed quartz, crossed by a band of right-handed quartz, bounded by strips of different structure. The plate was used in a tube 11 in. long, and formed an instrument especially adapted to the detection of small degrees of polarisation. The observations were made facing the south-west in a dimmed room, so that the eye should be sensitive. The results of the numerous observations on different evenings were entirely concordant, and are thus summed up by Prof. Wright :—(1) The zodiacal light is polarised in a plane passing through the sun. (2) The amount of polarisation is, with a high degree of probability, as much as 15 per cent. but can hardly be as much as 20 per cent. (3) The spectrum of the light is not perceptibly different from that of sunlight, except in intensity. (4) The light is derived from the sun, and is reflected from solid matter. (5) This solid matter consists of small bodies (meteoroids) revolving about the sun in orbits crowded together towards the ecliptic.—The second article is the first instalment of a communication by Mr. W. M. Fontaine, On the "great conglomerate" of New River, West Virginia.—The third article is by Mr. S. W. Johnson, On the use of potassium dichromate in ultimate organic analysis. Potassium dichromate, the author thinks, possesses all the properties needful for an oxidant in organic analysis, and ordinary kuolin is the best material for diluting it. He gives the details of some of his experiments.—Then follows an article by Mr. C. H. Hitchcock, On the Helderberg Rocks of New Hampshire, which is illustrated by a map, and is to be continued.—The Rev. H. C. Hovey contributes an interesting article on *Rabies mephitica*. The bite of the common skunk (*Mephitis mephitica* Shaw) is often dangerous, and leads to symptoms somewhat analogous to those which follow the bite of a mad dog. Mr. Hovey has obtained particulars of forty-one cases of *Rabies mephitica*, and of these forty were fatal.—Mr. Carey Lea of Philadelphia finds that when silver bromide is treated with pyrogallic acid, after exposure to light, the black substance which remains contains bromine and is resolved by nitric acid into normal silver bromide (left behind as a pale yellow film) and silver which passes into solution. It is, therefore, either a sub-bromide or an oxy-bromide; not an oxide. The existence of these compounds is evidently an argument for doubling the atomic weight of silver, as has recently been proposed on other grounds.—Mr. Meek continues his notes on the fossils figured in the recently-issued fifth volume of the Illinois state geological report.—The brief contributions from the physical laboratory of the Harvard College are also continued. They include No. v., On a method of freezing a magnetic bar from the influence of the earth's magnetism, by John Trowbridge. No. vi. Note on Melde's experiment, by W. Lowery. No. vii. A spark adjuster for the Holtz machine, by James Minot. No. viii. Effect of condensers on the brush discharge from the Holtz machine.—Mr. E. A. Verrill continues contributions to zoology, giving the results of dredging at three stations on the coast of New England, on Cashe's ledge, Jeffrey's ledge, and Stellwagen Bank.—In the "Scientific Intelligence," the section "Chemistry and Physics" consists of notices of papers published in Europe. In section "Geology and Natural History" there is a notice of a communication in the *Overland Monthly* On mountain sculpture in the Sierra Nevada, and on the method of glacial erosion, by E. S. Carr. He holds that glaciers do not so much mould and shape rocks as that they "disinter forms already conceived and ripe." The grain of a rock determines its surface-forms.—There is also an extract from a letter to Dr. Dana, referring to volcanic action in Hawaii, where Mauna Loa has been in full activity since April 1873.—An abstract is given of Prof. W. S. Clarke's experiments on the amount of pressure in the sap of plants. The mercurial gauge has been used on the sugar maple, and observations were made day and night from April 1 to July 20.